METHYL KETONES IN CAMEMBERT CHEESE

In a previous report from this Laboratory (1), qualitative and quantitative data were presented on the methyl ketones in the fat phase of various commercial Blue cheeses. It was of interest to us to investigate the methyl ketone content in another mold-ripened cheese, namely Camembert, and to compare the data obtained on domestic and foreign varieties with each other and also with our results from the Blue cheese study.

METHODS

Cheese samples of unknown age were purchased commercially and analyzed the following day. The fat was recovered from the cheese by grinding 3 oz of cheese (including the mold layer) with 80 g of dried (150 C, 24 hr) Celite 545[1] in a mortar. The damp celite was then packed into a chromatography tube and the fat washed out with carbonyl-free hexane (2) until a total of 200 ml of effluent was obtained. The effluent (which contained approximately 13 g of fat) was then quantitatively analyzed for methyl ketones following the procedures of Schwartz et al. (3).

RESULTS AND DISCUSSION

Results of the analyses are given in Table 1.

[1] Reference to certain products or companies does not imply an endorsement by the Department over others not mentioned.

The major ketone in all cheeses was nonanone-2. This is in contrast to Blue cheese, in which heptanone-2 was found to be the major carbonyl component (1). All of the ketones found in the Camembert cheeses are present in Blue cheese (1). The latter, however, contains much more ketone than does Camembert.

French Camembert contained the largest amount of total ketone as well as the largest amount of the C_{11}, C_9, and C_7 ketones.

No pentanone-2 was found in the domestic cheese and no acetone was detected in any of the cheeses.

D. P. SCHWARTZ
O. W. PARKS
Dairy Products Laboratory
Eastern Utilization Research and Development Division, USDA
Washington, D. C.

REFERENCES

(1) SCHWARTZ, D. P., HALLER, H. S., AND KEENEY, M. Direct Isolation of Carbonyl Compounds from Fats and Oils. Anal. Chem. Unpublished results. 1963.

(2) SCHWARTZ, D. P., AND PARKS, O. W. Preparation of Carbonyl-Free Solvents. Anal. Chem., 33: 1396. 1961.

(3) SCHWARTZ, D. P., AND PARKS, O. W. Quantitative Analysis of Methyl Ketones in Blue Cheese Fat. J. Dairy Sci., 46: 989. 1963.

TABLE 1

Concentration of methyl ketones in the fat extracted from foreign and domestic Camembert cheeses

Cheese	(C_{15} + C_{13})	C_{11}	C_9	C_7	C_5
		(μmoles per 10 g of extracted fat)			
French	< 0.1	0.68	3.37	1.53	0.34
Danish	< 0.1	0.54	1.38	1.05	0.35
U.S.A.	< 0.1	0.48	1.45	0.60	0.00